The Future of Agriculture-Specific and Economywide Institutional Reform

The poor performance of agricultural enterprises in Russia and Ukraine is partly due to the failure of reforms to provide adequate incentives. Farms generally face two kinds of incentives in a market economy. One incentive is a penalty for failure – farms that do not perform well financially will eventually go bankrupt. The other incentive is a reward for success – owners of farms that perform well will earn profits, and perhaps be able to expand their operations. Economic reforms should provide such incentives to Russian farmers to encourage the flow of resources – land, labor, and capital – from unprofitable to profitable farms. ¹⁰

Investment is also critical to the revitalization of Russian and Ukrainian agriculture. The stock of agricultural machinery is severely depreciated, and what remains from the Soviet era is too capital-intensive (as suggested by the allocative efficiency results). Without new investment, the percentage of Russia's already well-aged tractor fleet that is completely depreciated will grow. In 1999, the Russian Ministry of Agriculture reported that 25 percent of the total tractor fleet and 30 percent of the grain combine fleet was nonoperational (Ministry of Agriculture, 2002).

Such investment and the necessary flow of resources from unprofitable to profitable farms will not occur without some important economic reforms. Necessary reforms can be divided into two general categories: agriculture-specific and economywide institutional reform. Agriculture-specific reforms include bankrupting insolvent Russian and Ukrainian farms and liberalizing land transactions. Economywide reform would involve the creation of a system of commercial law that protects property rights and an increase in the stability of legislation in general.

Agriculture-Specific Reforms

Bankruptcy procedures for insolvent farms. At the farm level, clear bankruptcy procedures that allow profitable farms to take over unprofitable ones should encourage farmers to use their inputs more productively and adopt technology that is more appropriate to the relative prices of machinery and labor. Very few farms have gone bankrupt since reforms began. In 1998, the year of Russia's financial crisis, 88 percent of all corporate farms were unprofitable (Goskomstat, 2001). In 1999, when the devalued ruble made agricultural production more competitive, 54 percent were still unprofitable. 11 The lack of bankruptcies, combined with the overall unprofitability of the agricultural sector, indicates that a large amount of land, labor, and other resources is tied up in inefficient farms. Farms could become more cost-efficient if they were to adopt more labor-intensive techniques in general, and switch from crops requiring machinery-intensive technology to more labor-intensive ones (for example, from wheat and sugarbeet production to fruit and vegetable production).

Mortgage markets and the ability to use land as collateral. Mortgage markets can do much to facilitate the redistribution of land to low-cost producers. The most cost-efficient farmers earn the highest profits and are therefore willing to bid the most for agricultural land. However, the lack of a mortgage market limits the supply of available land at any given time and, in general, limits the ability of low-cost producers to make attractive bids to purchase land.

Western policy advisors have pushed for land reform consistently throughout the reform period, and Russian policymakers have just as consistently resisted it. The opposition originates, as can be expected, from members of the Communist Party, who argue that "the introduction of free buying and selling of land will destroy our village, turn villagers and all working people into laborers without rights, and tear Russia's state sovereignty and territorial integrity out by the roots." (Comments on the proposed land bill by Communist Party leader Gennady Zyuganov and Agrarian faction leader Nikolai Kharitonov, Interfax, June 2001)

¹⁰CEFIR, the Center for Economic and Financial Analysis based in Moscow, points out the importance of resource market mobility in a paper describing the benefits of joining the World Trade Organization (CEFIR, 2001).

¹¹As mentioned earlier, farms may be deliberately exaggerating their losses in order to avoid paying back loans, although the number of loss-making farms is probably accurate. The threat of bankruptcy would counterbalance the incentive to exaggerate losses.

The Effect of Land Reform on the Russian Agricultural Credit Market

Below we present some estimates of the impact of land reform on agricultural credit markets in Russia. Some analysts claim that the current price of land in Russia is so low that using land for collateral will not provide enough credit to the average farm to purchase even one tractor. However, current land prices reflect the inability to use land for collateral. If land reforms were implemented, the price of land would rise.

This is an interesting empirical question: if land could be used for collateral, how much credit could the average farm in Russia raise? Under the assumption that a bank will not lend a farmer more than the purchase price of land, the amount of credit each farm can raise will be roughly equal to the value of its land. Thus, an estimate of the land's value should provide an approximate idea of how much credit could be raised by mortgaging land.

The lack of land markets makes it difficult to measure land prices in Russia and Ukraine. However, the allocative efficiency study estimated shadow prices of land of corporate farms in various regions of Russia (shown below). The shadow price of land is the price implied by the farmer's choice of how much land to sow, given the expected output price and the prices of other inputs. These yearly rental values can be used to estimate the purchase price of the land.

Annual shadow land prices, adjusted for land quality, by district

	1995	1996	1997	1998
	1990			1990
	Dollars per hectare			
Russia	12.3	12.6	12.5	7.9
Northern District	19.0	19.0	16.9	11.4
Northwest District	24.1	21.7	23.0	15.4
Central District	19.7	19.0	17.8	11.9
Volga-Vyatka District	9.5	10.0	10.0	6.4
Central Black Earth District	15.8	14.8	14.4	9.6
Povolzhsky District	14.0	13.7	14.2	8.4
North Caucasus District	17.4	19.9	20.1	12.7
Urals District	9.1	10.1	9.9	6.0
Western-Siberian District	10.0	11.2	11.2	7.1
Eastern-Siberian District	8.7	7.5	7.0	4.5
Far East District	30.1	21.2	22.5	12.5

In both Russia and Ukraine, land sales are virtually nonexistent, and land transactions presently are carried out through leasing arrangements. While leasing allows a rental market to exist, leased land cannot be used as collateral. Many Russian policymakers believe that land prices, as reflected in current prices for leased land, are so low that the benefit from allowing land to be used for collateral would be negligible. ERS research suggests that this is not the case (see box, "The Effect of Land Reform on the Russian Agricultural Credit Market").

Currently, several oblasts (the Russian equivalent of States or provinces) are experimenting with land markets, permitting the purchase and sale of land. At present, the use of agricultural land for collateral is expressly forbidden in Russia, although a new land code liberalizing agricultural land markets and allowing for the use of land as collateral was passed by the legislature in 2002. 12 The current version of the agricultural land reform bill will choose a set of rules to follow when liberalizing land markets, but allow the oblasts to decide whether and when to start the liberalization procedure. This approach would legitimize the agricultural land reforms that are already underway in some parts of Russia, while allowing less progressive regions to outlaw land sales altogether if they wish. In Ukraine, a land reform bill was passed in 2001, but

¹²In 2001, the legislature passed a law allowing the sale of land in urban markets.

The above prices reflect both the quality of land and the relative scarcity of land compared with labor. For example, the Central Black Earth District has some of the best land in Russia, but prices are not high because arable land is abundant. In the Far East District arable land is scarce, so land prices are high.

The purchase price of land can be approximately calculated as the rental price divided by the real interest rate. This approximation arises because the present discounted value (PDV) of an asset expected to generate income forever is equal to the yearly cash income of the asset, discounted by the interest the income could have earned if invested in a riskless asset. That is, if the yearly cash income is CI, and the interest rate is r, then

$$PDV \cong CI + CI \cdot (1-r) + CI \cdot (1-r)^2 + CI \cdot (1-r)^3 + \dots = \frac{CI}{r}$$

It is reasonable to use 5 percent as an "optimistic" interest rate (5 percent is approximately the inflation-adjusted rate of return of the U.S. treasury bill) and 30 percent as a "pessimistic" rate (the real rate of return of Russian domestically issued debt in the months prior to the domestic default in August 1998). Using these two interest rates, we can estimate "optimistic" and "pessimistic" land values that would prevail once land prices rise to the ERS estimates of their current contribution to production.

Given the value of land in 1997 (when the harvest was about as great as in 2001), how many hectares of land must be mortgaged to purchase one \$5,000 Byelorus tractor? This is a useful benchmark to use, since if not even one tractor can be purchased, then liberalizing the land market will have no impact. Under the pessimistic scenario, about 120 hectares would have to be mortgaged to purchase one tractor. Under the optimistic scenario, about 40 hectares would have to be mortgaged. Even the relatively few private farms, whose average size is about 40 hectares, could afford to purchase a tractor by mortgaging their land.

land transactions will not be allowed until 2005. Furthermore, the transactions that will be allowed must be less than 100 hectares. Unrestricted land transactions will be allowed only in 2010.

Economywide Reforms

Legislative environment. The legislative environment and the system of commercial law must be geared toward allowing farmers to profit from long-term investments. Even with functioning markets, investment will not occur if profits are appropriated by taxes, criminal elements, or rent-seeking government officials (Safavian et al., 2001). When farmers are not certain that they will benefit personally if their farm shows a profit in the future, they tend to extract profits

from existing assets today at the expense of future income. Macroeconomic risk can also make farmers short-sighted, as can the general uncertainty caused by the constantly changing tax and licensing legislation. Also, legislation from different branches of the government is often contradictory.

Farmers' short-sighted behavior results in the failure to care for or invest in physical assets like machinery and land. Many Ukrainian farmers, for example, do not bother to rotate their sunflower crops, necessary to avoid future insect infestations, since there is no guarantee that future profits will accrue to them. A key outcome of successful commercial law reform would be to improve the incentive to take better care of durable assets, which in turn will tend to reduce waste and

The Importance of a Stable and Predictable Legal System to Economic Growth

The legal system can provide third-party enforcement of contracts. Without third-party contract enforcement, transactions are generally restricted to a closed group of acquaintances, with whom repeated future transactions are expected to occur. In such a case, even without a developed court system, the threat of losing future business is enough to ensure a contract will be carried out. Non-acquaintances have no such threat, and appealing to the court system can be a long and costly process, in any country.

However, over the course of the years, the court systems in the West have decided cases consistently enough that the court's decisions can be forecast before a dispute comes before it. This is the main advantage of a legal system that makes decisions consistently - because the court's decision can be predicted beforehand, the dispute can be resolved without officially addressing the court, saving both time and expense.

In Russia, the legislative environment is too unstable to allow the outcome of a court case to be predicted before it actually goes before the court. Consequently, Russians often conduct business only with close acquaintances whom they trust. If the legislative environment in Russia stabilizes, Russians may be able to do more business outside their immediate circle of acquaintances.

encourage investment (see box, "The Importance of a Stable and Predictable Legal System to Economic Growth").

The credit market. Also problematic for agricultural investment is the poor performance of the credit market in general, and the credit market in the agricultural sector in particular. There are a number of reasons unrelated to agriculture for this poor performance. The unstable macroeconomic environment tends to drive away risk-averse investors, lowering the overall liquid-

ity in the banking system. Furthermore, prior to the 1998 financial crisis, the Russian government was paying an average return of 30 percent on its debt after inflation. In order to compete with government debt, investment projects had to compete with the return on government debt. After the crisis, the interest rate on government debt fell significantly, so the problem has become less severe.

Labor market reforms. Many Russian and Ukrainian farms tend to maximize employment rather than profit, a factor that restricts labor movement from one farm to another, or away from farming entirely. Farm managers tend to hire more than the optimal number of laborers in response to pressures from local governments, who use their access to government reserves (fuel, seed stocks, fertilizers, etc.) to demand that rural employment be maintained. Farms that comply are able to purchase inputs in exchange for a proportion of the upcoming crop. Most farms have no choice because there is no agricultural credit market that would allow them to cover input purchases without government aid. While achieving the short-term goal of increased rural employment, the practice tends to erode the farm's profitability in the long run.

Other Institutional Problems

A number of institutional problems continue to dampen investment, which neither Russia nor Ukraine has addressed:

- The transportation infrastructure in Russia is poor and deteriorating, making it particularly difficult to transport perishable food products (such as unrefrigerated meats) across long distances.
- Few national-level institutions in either country distribute market information, like the Chicago Board of Trade or the USDA's market reports.
- Government tax and loan policies, perhaps inadvertently, discourage farms from becoming profitable. Once farms begin to show a profit, they will probably be expected to pay back loans that until now have been routinely forgiven. Taxes on profits do not apply when a farm is insolvent, but these will become an additional burden for profitable farms. Thus, farms have an incentive not to show a profit in order to avoid repaying loans and paying taxes on profits.

•Russia and Ukraine do not have an effective system to diffuse new agricultural technology to farmers. The system that was developed in the former Soviet Union was very ineffective in creating and disseminating new agricultural knowledge. Since independence, neither Russia nor Ukraine has funded significant projects to improve agricultural research and development and the extension system.

Many of the proposed agriculture-specific and economywide reforms are interrelated and complementary. For example, land reform will work best once the legislative environment is stabilized and the regulatory system is improved. Stabilizing the legislative environment and reducing the regulatory and licensing requirements to do business in Russia should allow farmers to profit more from their investments. Farmers then would become more forward-looking, but would be unable to act on their long-term investment plans without a well-functioning credit market. Allowing land to be used for collateral and setting up legislation supporting a national mortgage market probably would improve the performance of the agricultural credit market. The improved investment climate then would lead to higher agricultural production.

The Future of Agricultural Production in Russia and Ukraine

There are signs of improvement in Russia's institutional environment, even without significant agricultural reforms. The Russian parliament recently passed legislation reforming the tax and court systems that could significantly simplify the working environment for Russian businesses. The passage of the tax code and judicial reform legislation in 2001, as well as the land code legislation proposed for 2002, may help stabilize the legislative environment in those areas. A stable legislative environment will allow the legal system time to interpret gray areas of the law and let entrepreneurs learn how the system works.

These reforms, however, may not be sufficient to bring about productivity increases. Russia has yet to ade-

quately address farm insolvency issues, and many economywide reforms remain unaddressed. So far, Russia and Ukraine have earned a score of 5.6 and 5.4 out of 10, respectively, from the World Bank for their reform progress (Csaki and Fock, 2000). Russia and Ukraine receive relatively high marks only for the removal of subsidies, measures to mitigate the government monopoly on trade, and the elimination of price controls. However, they continue to lag behind other transition countries in land and institutional reform, and rural finance.

The reforms that remain are politically sensitive and would require a considerable investment of time and resources to implement. Forcing insolvent corporate farms to go bankrupt not only means tolerating the resulting unemployment, but will also require training judges to oversee the bankruptcy procedures. Furthermore, with the threat of bankruptcy, farm management would strive harder to prevent the diversion of inputs to subsidiary plots. Because the official unemployment insurance payments are so low, the subsidiary plots constitute Russia's primary social safety net, so any move to reduce the role of the plots in agriculture would be politically unpopular.

Furthermore, agriculture-specific reforms (bankruptcy procedures and land market reform) will be largely ineffective without complementary economywide institutional reforms. The right to buy and sell land will do little to improve farm performance if the institutions supporting land transactions, including legislation and regulation, are not in place. Furthermore, a land market will be more effective if land can be used for collateral and if the institutional environment for a national mortgage market exists.

Reversing the recent downward production trends will involve overcoming the longrun agricultural productivity decline dating back to the Soviet era. Earlier results seem to indicate that the gap in overall agricultural productivity has widened between the West and Russia. This suggests that if Russia were to implement appropriate reforms, the increase in the productivity growth rate could be relatively high as it "catches up" with the West.